UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323

NOV 20 1992

Report Nos.: 50-325/92-39 and 50-324/92-39

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324 License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: October 19-23, 1992

Inspector: Frank Jape 11/16/92
for M. Thomas Date Signed

H. I. Whitener 11-13-92
H. Whitener Date Signed

Frank Jape 11/16/92
for G. Wiseman Date Signed

Approved by: M. Branch 11-16-92
M. Branch, Chief Date Signed
Test Programs Section
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope:

This routine, announced inspection was conducted in the areas of followup on previous NRC inspection findings.

Results:

In the areas inspected, violations or deviations were not identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*K. Ahern, Unit 2 Operations Manager
*H. Beane, Manager, Quality Control
A. Bishop, Acting Manager, Brunswick Engineering Support Section, Nuclear Engineering Department
*J. Boone, Manager, Events Analysis Subunit, Regulatory Compliance
*M. Bradley, Site Manager, Nuclear Assessment Department
A. Burkhart, Manager, Operating Experience Program, Nuclear Services Department
*S. Callis, Site Licensing Representative
*J. Cowan, Manager, Technical Support and Regulatory Compliance
*M. Foss, Manager, Corrective Action Program
*R. Godley, Manager, Regulatory Programs, Regulatory Compliance
*B. Hart, Nuclear Assessment Department
*R. Helme, Manager, Technical Support
*J. Holder, Manager, Outage Management and Modifications
*M. Jackson, Maintenance Manager, Unit 2
*M. Kesmodel, Coordinator, Integrated Action Plan
*L. Loflin, Manager, Nuclear Assessment Department
*D. McCarthy, Manager, Nuclear Licensing
*D. Moore, Maintenance Manager, Unit 1
*R. Morgan, Plant Manager, Unit 1
E. Northeim, Principal Engineer, Mechanical Discipline, Brunswick Engineering Support Section
*R. Richey, Site Vice President, Brunswick Nuclear Project
D. Scott, Manager, Maintenance Staff
*R. Starkey, Vice President, Nuclear Services Department
*G. Thearling, Senior Specialist, Regulatory Compliance
*G. Warriner, Manager, Control and Administration
*D. Waters, Manager, Brunswick Licensing Unit
*A. Watson, Senior Vice President, Nuclear Generation

Other licensee employees contacted during this inspection included engineers, operators and administrative personnel.

NRC Personnel

*P. Byron, Resident Inspector
*H. Christensen, Section Chief, Division of Reactor Projects, Region II
*S. Ebneter, Regional Administrator, Region II
*J. Johnson, Deputy Director, Division of Reactor Projects, Region II
*R. Lo, Licensing Project Manager, NRR
D. Nelson, Resident Inspector
*R. Prevatte, Senior Resident Inspector

*Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Action on Previous Inspection Findings (92701, 92702)

a. (Closed) URI 50-325, 324/89-34-05, Evaluate the Adequacy of Licensee's Actions to Investigate Design Integrity Issues for Safety Systems Other Than HPCI and SW, Including Adequacy of Preop Test Results.

This issue has been tracked by the licensee as IAP Item D7 and was reviewed during a previous NRC inspection (Report No. 91-27) which indicated that the action was expanded to include a Design Basis Reconstitution Document (DBD) program based on guidance presented in NUMARC 90-12, issued October 1990. The issue remained open to allow continued NRC review as the licensee progressed with program development and implementation.

The inspectors reviewed the licensee's program, including completed DBD 37.4 for the Diesel Generator Building Ventilation System and concluded the following:

.) The System Design Basis Reconstitution Project scope included 27 system DBDs with priority on safety related plant systems. In addition, 12 generic issues such as Appendix R, seismic qualification, and station blackout, are to have the design basis history integrated into generic issue design basis documents.

(2) The program status is on schedule with a target completion date at the end of 1993.

(3) The program included targeting the results of preoperational and surveillance testing for use in the validation process.

Overall, the inspectors assessment concluded that the program scope and schedule were adequate for providing the design basis for Brunswick Nuclear Project plant systems and generic issues. Therefore, this item is considered closed. However, the inspectors noted that the DBD validation process outlined in NED Guideline Number E-42 lacked field validation in many areas and did not include validation of as-built configurations with the design drawings. Considering that design drawing configuration problems have been identified in the past and recognized as a continuing problem at Brunswick, the exclusion of as-built configuration walkdowns as part of the validation of DBDs may result in continued significant design drawing configuration problems.

b. (Closed) IFI 50-325, 324/89-34-18, Followup on Correction of TS Sampling Plan Flaw, (IAP Item D1-4) and Determine its Effectiveness with Respect to Periodic Reviews of TS Requirements, ISI/Appendix J, and Commitment Verification (IAP Item D1-1).

IAP Items D1.a and D1.d (which are the same IAP Items D1-1 and D1-4 discussed above) required the licensee to develop an improved sampling plan for QA surveillance of TS requirements. Surveillance Report No. 89-082 documented the results of the first trial run for sampling TS surveillances. A second trial run was completed and the results were documented in Surveillance Report No. 90-034, dated October 17, 1990. The inspectors reviewed Surveillance Report No. 90-034 during NRC inspection 50-325,324/91-27 and verified that the acceptance criteria for the sample batch had a greater than 95 percent successful completion of TS requirements. Selection of the sample size was also reviewed to verify that compliance with the sampling procedure had been met in order to address the non-homogenous surveillance intervals within the STTS data base. No deficiencies were identified. Based upon the results of Surveillance Reports 89-082 and 90-034 the licensee management determined that: (1) the TS sampling plan had been effective in verifying that surveillance testing intervals were being met and (2) a reduced level of effort and reduced frequency of implementing the sampling plan was desirable.

During NRC inspection 50-325,324/91-27, the inspectors determined that a revised TS sampling plan had been developed by the licensee. This sampling plan had a sample size of 50 TS requirements in lieu of the 100 previously required by the original TS sampling plan. At the time of the inspection a QA surveillance of TS surveillance requirements was in progress using this revised TS sampling plan. Pursuant to review of the revised TS sampling plan the inspectors expressed concerns regarding the suitability of the statistical method being used and licensee management's failure to validate the method, prior to use. In response to the inspection team's concern CP&L management issued company correspondence BNP/NAD/91-201, dated October 2, 1991, to have an independent assessment and validation of the revised TS sampling plan performed.

As a result of the implementation status and the above inspectors' concerns this items was left open pending (1) completion of the validation of the revised TS sampling plan and a determination of its suitability for use and; (2) Licensee's management review of the present ongoing QA surveillance results for effectiveness.

The inspectors reviewed the licensee's validation of the revised TS sampling plan during this current inspection and determined that the validation method was adequate. The validation method

was described in licensee internal memoranda dated November 25, 1991, December 12, 1991, and May 4, 1992.

In addition, the inspectors also reviewed the QA surveillances performed on the TS surveillance requirements. The QA surveillances were dated December 17, 1991 and August 27, 1992 and were performed in accordance with the revised TS sampling plan. The QA surveillances did not identify any missed TS surveillances for those surveillances that were randomly selected and reviewed.

The inspectors also reviewed the list of ACRs initiated in 1992 to determine if that process had identified any missed TS surveillances. The inspectors found that four ACRs were written for instances where a TS surveillance was missed. The four surveillances were missed out of over 40,000 total surveillances performed for both units during 1992. The surveillances missed were in the areas of fire protection and IST. The inspectors concluded that the licensee has an adequate program for tracking the performance of TS surveillance requirements. This item is considered closed.

c. (Closed) IFI 50-325,324/89-34-21: Followup on Implementation and Effectiveness of Developed Post-Maintenance Testing Guidance (IAP Item D4):

This item represented a DET concern that proper post-maintenance inservice inspection and testing was not always specified for ASME Code components and materials following repairs. Between 1989 and 1991, the item was reviewed during four NRC inspections which indicated that no effective program for enhancement of PMT existed.

NRC review of this area during a special inspection conducted on February 17 - March 27, 1992, (Report No. 50-325, 324/92-04) revealed that PMT still had serious programmatic deficiencies that had not been corrected despite the existence of the IAP item, previous regulatory attention, and Corrective Action Program involvement. Based on the results of this inspection, NRC enforcement actions in this area were taken that included a Notice of Violation and a Notice of Deviation. The licensee's response letter to the NRC enforcement, dated May 27, 1992, outlined the Carolina Power and Light Company corrective actions to address PMT programmatic weaknesses. These corrective actions are to be completed by December 31, 1992. Based on the above, this IFI is closed. NRC will continue to follow the licensee's corrective actions to address PMT weaknesses and will track the completion of this issue by Open Items 50-325,324/92-04-01 and -02.

d. (Closed) IFI 50-325,324/89-34-23: Follow-up on Implementation and Effectiveness of Corrective Action Program Improvements (IAP Item D9).

This IFI represents DET concerns that the corrective action program at Brunswick was inadequate due to weaknesses in problem identification, cause determination, and prompt development and implementation of corrective actions. The licensee's Level 1 IAP action item to address this matter was Item D9, "implement corrective action program improvements". Seven Level 2 action items were established to accomplish the improvements. NRC Inspection 325,324/90-31 determined that these Level 2 items had all been completed. However, reservations were expressed regarding the effectiveness of the actions and the item was not closed.

Item D9 was examined in Inspection Report 325,324/91-15. That inspection found that the program was officially implemented at the end of 1990 and had resulted in the identification of a large number of problems. A large backlog of these problems requiring resolution had resulted and the effectiveness of the program remained in question. An effectiveness review conducted by the licensee's Nuclear Assessment Department in March 1991 (memo from M. Bradley to W. Simpson dated April 16, 1991) concluded that the program was "marginally effective" and that the IAP item should remain open pending further evaluation. Licensee corporate corrective action program personnel stated that they considered that the effectiveness of the program could not be adequately judged at this early stage but that its effectiveness should be apparent by the end of 1991. The inspectors expressed concern that better methods of monitoring the effectiveness of the program were needed. For example, it appeared that the negative effects of backlog and imbalances in the distribution of backlog among organizations were not being adequately recognized. Because of continued concerns regarding the effectiveness of the program the item again remained open.

The status of this item was reexamined during the NRC inspection 325,324/91-27. The plant was in the first refueling outage to be initiated since the implementation of the improved Corrective Action Program. The inspectors determined that IAP Item D9 should remain open until the effects of the refueling outage on the program could be observed. A more detailed assessment of the licensee's resolution of the adverse conditions being identified was to be assessed during subsequent NRC inspections.

The NRC conducted a special engineering, technical support, and corrective actions inspection (Inspection Report 325,324/92-10) from March 30 - April 10, 1992. The objective of the inspection was to assess current Brunswick performance in the areas of engineering, technical support, and corrective actions, and to make comparisons with the performance that existed at the time of

the NRC DET inspection in May 1989. Inspection report 325,324/92-10 identified that many performance weaknesses observed during the DET were still present in 1992. Timeliness and effectiveness of corrective actions, equipment failures, and personnel/maintenance errors continued to occur. Several examples of untimely corrective actions were noted, poor root cause analysis were being performed, and there was a mismatch between the amount of existing work backlog and the amount of human and financial resources dedicated to resolve the issues in a timely manner.

The examples identified in Inspection Report 50-325,324/92-10 were identified as potential violation 50-325,324/92-10-01, Inadequate Corrective Actions. The Notice of Violation has not been issued, but is being considered for escalated enforcement action. NRC Inspection Report 50-325,324/92-12 dated May 27, 1992, and NRC letter dated June 23, 1992, both requested that CP&L provide a written response to address, among other things, the ineffective corrective action program.

The licensee provided a response to the NRC dated July 23, 1992, which described actions to address the ineffective corrective action program. Subsequent to the July 23, 1992 response, the licensee committed to provide a more detailed response by November 9, 1992.

Since the NRC has identified potential violation 50-325, 324/92-10-01 concerning inadequate corrective actions, and the licensee is in the process of developing an action plan to address the ineffective corrective action program, IFI 50-325, 324/89-34-23 (IAP Item D9), will be closed. Licensee corrective actions for Item D9 will be followed in conjunction with the followup to potential violation 50-325,324/92-10-01.

e. (Closed) IFI 325,324/89-34-24, Develop and Institutionalize Corporate Corrective Action Program (IAP Item D10).

The DET concern was that there was little or no corporate involvement in the Corrective Action Program to provide oversight, direction and assessment of the program's effectiveness.

Nuclear Generation Group Manual, NGGM 405-04 is the corporate document delineating the CAP. Each CP&L nuclear facility and the NED have developed procedures to implement the corporate program. The Brunswick facility implemented the CAP, December 31, 1990. NRC Inspection Report 325,324/91-15 documented the review of the CAP and concluded that the program was in place. This inspection identified that staffing for the program at the corporate level had not been fully identified and the performance indicators to measure the effectiveness of the program implementation had not been developed.

The inspectors reviewed the CAP organization and noted that corporate coordination and support responsibilities were assigned to the NLS. Corporate staffing was completed in July 1991 with the appointment of a senior engineer as the Corporate CAP Coordinator under the direction of the CAP/OEF Manager.

During Inspection 50-325,324/91-27, the inspectors reviewed several documents the licensee was using to measure the effectiveness of the CAP implementation. The new program was started December 31, 1990, and the licensee had been monitoring effectiveness by conducting monthly meetings with CAP coordinators from each nuclear facility, corporate CAP coordinator, managers, training personnel and NED personnel. In addition, senior management received a monthly effectiveness report which provided the status of IAP action items and identified CAP status with regard to action items being worked and improvements made to the program. The NAD conducted a special assessment of the program. The findings were reviewed by senior management and action items were assigned to specific department managers. The review of CAP/OEF action item tracking list dated September 18, 1991 indicated approximately 90 percent of these action items were completed.

During performance of inspection 50-325,324/91-27 the inspectors held discussions with corporate program managers concerning a continuous assessment program to monitor effectiveness of the CAP and other programs such as the 10 CFR 50.59 Safety Review Program. The licensee stated that a continuous assessment program was scheduled to be issued by the end of 1991. Performance indicators to be used to monitor the aforemention programs have been finalized. These indicators and other attributes such as periodic meeting of nuclear facility program coordinators, program managers, and others will be included into a formal process for management approval. The inspectors were assured that the program data base, reports, improvements, problems and actions taken would be retrievable and available for audit. The current programs for monitoring effectiveness of the IAP will be phased out approximately one year after the IAP is closed. The purpose of this additional time was to assure that the IAP actions were complete and fully closed out. This item remained open until further overview of the program and its effectiveness could be analyzed.

During this current inspection the inspectors reviewed the licensee's continuous assessment plan which was issued December 26, 1991. As discussed in paragraph 2.e of this report, the inspectors noted that the licensee is developing an action plan to address the ineffective corrective action program identified in NRC Inspection Report Item 50-325,324/92-10-01. Therefore, IFI 50-325,324/89-34-24 (IAP Item D10) is closed and future corrective actions will be followed in conjunction with NRC followup for the potential violation.

f. (Closed)* IFI 50-325, 324/89-34-36: Implementation and Effectiveness of Corporate Quality Assurance Department Improvements (IAP Item E.4).

g. (Closed)* IFI 50-325,324/89-34-37: Implementation and Effectiveness of Independent Performances Assessments (IAP Item E5).

*Note: As the licensee developed plans to resolve these two items, it became apparent that there was considerable overlap between the plan and the actions developed to satisfy both items. Therefore these items were reviewed together and discussed together.

The above items were identified by the NRC DET inspection in 1989 which concluded that Corporate QA audits were ineffective. Specifically, the audits were limited in scope, primarily programmatic, focused on document reviews and administrative requirements, and were not performance based.

In the IAP, developed in 1989, the licensee committed to integrate the activities of Corporate and Site QA organizations, broaden the scope of audits and develop performance based methods.

The licensee implementation of commitments were reviewed in a number of NRC followup inspections in 1990 and 1991. In NRC report 50-325,324/91-27 the inspectors concluded that the licensee had implemented the commitments in the IAP items E.4 and E.5.

The major change established to resolve these issues was the formation of a new department called, the NAD. A charter was issued which stated that NAD is responsible for independently evaluating functions which have potential nuclear safety, reliability or quality implications. The department was established in January 1991.

The NAD structure was established to mirror the site functional areas, such as operations, maintenance, engineering and technical support, and environmental and radiation control. A component had been established at both the corporate office and the site. An overview plan was developed which integrates corporate and site assessment activities.

The assessment process has also been modified over past years. All of the activities are considered assessments and are performance based. The previous audits, required by the TS are embedded within the performance based assessments.

In NRC Report 50-325,324/91-27, the inspectors reviewed available NAD assessments and found, that although the licensee had implemented the actions to improve the self assessment process, there was not yet sufficient objective evidence available on which to judge the effectiveness of these actions. The inspectors concluded that closure of these items would recuire reviews and evaluations of additional

assessments by NAD and effectiveness review of the actions taken to correct the findings.

In the period February 17 to May 1, 1992 (NRC Report 50-325,324/92-12) the NRC conducted an extensive appraisal of the licensee's performance. The NRC determined that the NAD organization began operation in January 1991, before staffing and procedures were complete. For the most part, initial assessments by this organization were not effective. As of April 1992, staffing and procedures were essentially complete; and performance had improved. The Brunswick sitewide assessment completed November 1991, and the CAP assessment completed March 1992, identified significant performance deficiencies and the causes of these deficiencies.

In this same appraisal the NRC found that the licensee's CAP was not effective. Consequently, subsequent evaluation of NAD performance was based on whether assessments were effective in identifying problems. Effectiveness of the CAP is considered a separate issue and is under current NRC review.

The resident inspectors conducted a review of the licensee's self assessment capability in the period June 5 - July 3, 1992 (NRC Report 50-325, 324/92-19). In this effort the resident inspectors reviewed both routine and special NAD assessment reports from Mid 1991 and verified that NAD is conducting the audits required by the TS, the QA program, and other committed requirements. They identified as especially noteworthy, the findings in a series of audits of the CAP in 1991 and 1992, preventive maintenance in June 1992, maintenance in June 1992, and a corporate assessment in June 1992. Additionally, NAD conducted followup audits and reiterated previously identified problems where corrective action was not implemented or if implemented, was not effective. The resident inspectors concluded that overall, NAD assessments have shown significant improvement and provide a valuable input to senior management. They are achieving credibility with plant organizations and appear to be thorough in their assessments.

Also, NAD audits of the Environmental and Radiological Control (NRC Report 50-325,324/92-25) and the Emergency Preparedness (NRC Report 50-325,324/92-36) areas were reviewed by NRC specialist inspectors on August 31 - September 4, 1992 and October 19-23, 1992 respectively. The inspectors found that the NAD assessments made significant findings and identified the causes for the deficiencies.

The inspectors reviewed a number of the NAD assessment reports to evaluate the character of the findings. The assessments reviewed included:

Corrective Action Program	April 15, 1992
Technical Support and Outage Management	July 2, 1992
Outage Management Follow-up	August 24, 1992
Plant Material Control	October 6, 1992

In review of the above documents the inspectors found the assessments to be substantive. The findings were clearly stated and supported by performance based examples which served to further define the deficient area. The inspectors concluded that the NAD assessments were identifying significant problems over a broad scope of functional areas.

3. Exit Interview

The inspection scope and results were summarized on October 23, 1992, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee. The following items were closed:

URI 325,324/89-34-05
IFI 325,324/89-34-18
IFI 325,324/89-34-21
IFI 325,324/89-34-23
IFI 325,324/89-34-24
IFI 325,324/89-34-36
IFI 325,324/89-34-37

4. Acronyms and Initialisms

ACR	Adverse Condition Report
ASME	American Society of Mechanical Engineer
BNP	Brunswick Nuclear Plant
CAP	Corrective Action Program
CP&L	Carolina Power and Light
DBD	Design Basis Documentation
DET	Diagnostic Evaluation Team
HPCI	High Pressure Coolant Injection
IAP	Integrated Action Plan
IFI	Inspector Followup Item
ISI	Inservice Inspection
IST	Inservice Testing
NAD	Nuclear Assessment Department
NED	Nuclear Engineering Department
NLS	Nuclear Licensing Section
NUMARC	Nuclear Management and Resources Council
OEF	Operating Experience Feedback
PMT	Post Maintenance Testing
QA	Quality Assurance
STTS	Surveillance Test Tracking System
SW	Service Water
TS	Technical Specifications
URI	Unresolved Item